

2017 San Diego wildfire increased pediatric ER visits for breathing problems

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Following a 2017 San Diego wildfire, increased number of children visited the ER with respiratory problems, including asthma. Credit: ATS

A small wildfire in San Diego County in 2017 resulted in a big uptick in children visiting the emergency room for breathing problems, according

to new research published online in the *Annals of the American Thoracic Society*.

In "Increase in Pediatric Respiratory Visits Associated with Santa Ana Wind-driven Wildfire Smoke and PM2.5 levels in San Diego County," Sydney Leibel, MD, MPH, and co-authors report that the Lilac Fire, which burned from Dec. 7-16, resulted in 16 more visits each day to the ER by children under the age of 19 for breathing complaints. The complaints included difficulty breathing, [respiratory distress](#), wheezing and asthma.

Before it was extinguished, the Lilac Fire burned 4,100 acres. In 2017, wildfires burned more than 1.5 million acres across California, according to the state's Department of Forestry & Fire Protection.

"We conducted this study because wildfires are becoming increasingly common in California," said Dr. Leibel, a pediatric allergist/immunologist at Rady Children's Hospital in San Diego and an assistant professor of pediatrics at UC San Diego School of Medicine. "While there is significant data on the respiratory effects of these wildfires in adults, we wanted to investigate the health effects of wildfire smoke in the vulnerable pediatric population."

In collaboration with the Scripps Institute of Oceanography, the authors also demonstrated how the regional phenomenon known as the Santa Ana Winds have increased the health impacts of these fires in the county.

The researchers also found that children under the age of 12 were more likely to develop [breathing problems](#) leading to an ER visit than older children. The authors report that they found a similar pattern of increased visits for respiratory complaints to the county's [urgent care centers](#) during the wildfire, especially by [younger children](#).

To account for [seasonal changes](#) in ER and urgent care visits, the researchers analyzed health electronic medical records from 2011-17. They also analyzed levels of fine particle pollution, known scientifically as PM2.5, over the same time period. The researchers estimated that there was a five-fold increase in these tiny particles during the wildfire.

The authors said that the five zip codes with the largest changes in ER and urgent care visits for pediatric respiratory problems were located downwind of the [wildfire](#), which was driven by the Santa Ana Winds blowing from northeast towards the county's more populated coastal communities.

Given predicted changes in climate and population growth, the authors write that the impact of wildfires in the county is likely to grow in the coming decades.

"Our findings suggest that public health efforts focused on protecting young [children](#) with early warning systems and mitigation efforts downwind of Santa Ana Wind-driven wildfires may decrease the impact of these destructive wildfires in the future," Dr. Leibel said.

More information: www.thoracic.org/about/newsroom/nd-ped-er-visits.pdf

Provided by American Thoracic Society

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